BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Hatfield

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

Produced in 2004

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

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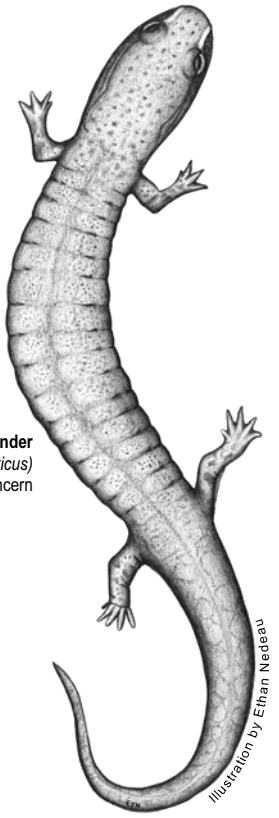
* Depending on the location of Core Habitats, your city or town may not have all of these sections.



Spring Salamander
(Gyrinophilus porphyriticus)
Species of Special Concern

Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.

Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries and Wildlife
North Drive, Westborough, MA 01581
Tel: (508) 792-7270, Ext. 200 Fax: (508) 792-7821
http://www.nhesp.org

For more information on rare species and natural communities, please see our fact sheets online at ***www.nhesp.org***

BioMap and Living Waters:
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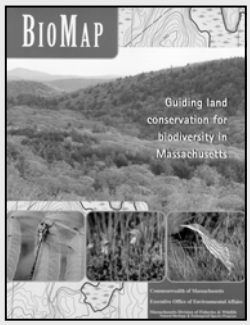
Introduction

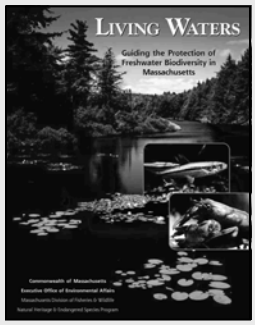
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, ***BioMap*** and ***Living Waters***. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate ***Core Habitats*** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the ***BioMap*** and ***Living Waters*** reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the ***riparian areas***, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as ***Supporting Natural Landscape*** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, ***Critical Supporting Watersheds*** highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap

	Species and Verified Natural Community Types	
Biodiversity Group	**Included in BioMap**	**Total Statewide**
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types

Living Waters

	Species	
Biodiversity Group	**Included in Living Waters**	**Total Statewide**
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- ***Endangered*** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- ***Threatened*** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- ***Special Concern*** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial ***watch list*** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- ***Critically Imperiled*** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- ***Imperiled*** communities typically have 6-20 sites or few remaining acres in the state.
- ***Vulnerable*** communities typically have 21-100 sites or limited acreage across the state.
- ***Secure*** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The ***Massachusetts Natural Heritage Atlas*** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

Natural Heritage & Endangered Species Program

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Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific ***fact sheets*** at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone *508-792-7270, Ext. 200*

by Fax: *508-792-7821*

by Email: *natural.heritage@state.ma.us*.

by Mail: *North Drive*
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - Natural Heritage Atlas, and more!

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BioMap: Species and Natural Communities

Hatfield

Core Habitat BM605

Natural Communities

Common Name	Scientific Name	Status
Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp		Imperiled
High-Terrace Floodplain Forest		Imperiled
Small-River Floodplain Forest		Imperiled
Transitional Floodplain Forest		Imperiled

Plants

Common Name	Scientific Name	Status
Green Dragon	*Arisaema dracontium*	Threatened

Invertebrates

Common Name	Scientific Name	Status
Brook Snaketail	*Ophiogomphus aspersus*	Special Concern
Elderberry Long-Horned Beetle	*Desmocerus palliatus*	Special Concern
Zebra Clubtail	*Stylurus scudderi*	Endangered

Vertebrates

Common Name	Scientific Name	Status
Wood Turtle	*Clemmys insculpta*	Special Concern

Core Habitat BM675

Natural Communities

Common Name	Scientific Name	Status
Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp		Imperiled

BioMap: Species and Natural Communities

Hatfield

Core Habitat BM706

Vertebrates

Common Name	Scientific Name	Status
Least Bittern	*Ixobrychus exilis*	Endangered

Core Habitat BM709

Plants

Common Name	Scientific Name	Status
Frank's Lovegrass	*Eragrostis frankii*	Special Concern
Pygmyweed	*Crassula aquatica*	Threatened
Sandbar Willow	*Salix exigua*	Threatened

Invertebrates

Common Name	Scientific Name	Status
Midland Clubtail	*Gomphus fraternus*	Endangered

Vertebrates

Common Name	Scientific Name	Status
Bald Eagle	*Haliaeetus leucocephalus*	Endangered

Core Habitat BM734

Plants

Common Name	Scientific Name	Status
Bush's Sedge	*Carex bushii*	Endangered

Vertebrates

Common Name	Scientific Name	Status
Four-toed Salamander	*Hemidactylium scutatum*	Special Concern
Spotted Turtle	*Clemmys guttata*	Special Concern

BioMap: Species and Natural Communities

Hatfield

Core Habitat BM751

Natural Communities

Common Name	Scientific Name	Status
Low-Energy Riverbank		Secure

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

BioMap: Core Habitat Summaries

Hatfield

Core Habitat BM605

This Core Habitat, encompassing riparian habitats along the Mill River in Whately, Hatfield, and Deerfield, supports a variety of rare plants and animals. For example, the area is home to several rare species of dragonflies, including the Endangered Zebra Clubtail dragonfly. It provides significant habitat for Wood Turtles, and supports a large population of Green Dragon, an unusual rare plant. The Core Habitat also encompasses large and high-quality examples of two of the state's more unusual wetland communities. This Core Habitat is vulnerable to development, pollution, and hydrologic alterations.

Natural Communities

This Core Habitat contains the highest-quality Transition Floodplain Forest known in the state. Transitional Floodplain Forests are riverside Silver Maple-Green Ash-American Elm forests that experience annual floods. Of the three floodplain forest community types, these communities are intermediate in vegetation and soils. Most examples of this rare community type are severely affected by alterations in hydrology and are consequently overrun with non-native plant species. A large example of this community that is minimally affected by human disturbances and exotic plants occurs in Hatfield, where it is found within a large area of agricultural land. In Whately this Core Habitat contains a large example of the very uncommon Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp. This community is an unusual type of wetland found in Massachusetts in one area of the Connecticut River Valley. This community type is dominated by Red Maple, with Black Gum, Pin Oak, and Swamp White Oak.

Plants

A large population of the unusual Green Dragon, a relative of Jack-in-the-Pulpit, is found in a floodplain forest within this riparian corridor.

Invertebrates

This Core Habitat includes a 17-km stretch of the Mill River in Whately and Hatfield that is important habitat for both the Zebra Clubtail dragonfly and the Brook Snaketail dragonfly. Also along the Mill River within this Core Habitat, in the northern part of Whately, is an area of wetlands and meadows with thickets of Elderberry that are habitat for the Elderberry Longhorned Beetle. This Core Habitat is located less than 10 km from Core Habitat in Williamsburg (habitat for the Elderberry Longhorned Beetle) and from Core Habitats in Hadley and Northampton (habitat for the Zebra Clubtail and Brook Snaketail dragonflies), which potentially allows for dispersal of these rare insect species between these various habitats.

Vertebrates

This long meandering stream with sandbars and bordering wooded swamps, wet meadows, upland forests, and fields provides significant and connected habitat for Wood Turtles. To benefit Wood Turtles, conservation efforts should seek to preserve unbroken corridors up to 600 yards wide all along the Mill River. Within this Core Habitat, forested and shrub wetlands and riparian forests also provide valuable spring migration habitat for a variety of songbirds.

BioMap: Core Habitat Summaries

Hatfield

Core Habitat BM675

Natural Communities

This Core Habitat contains the largest Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp in the state. These swamps are an unusual type of wetland found in Massachusetts in one area of the Connecticut River Valley. This community type is dominated by Red Maple, with Black Gum, Pin Oak, and Swamp White Oak. Although some areas were recently logged, the community here is vigorously regenerating with native species.

Core Habitat BM706

Vertebrates

This Core Habitat encompasses the Great Pond wetland in Hatfield. This is a freshwater marsh that is an old oxbow of the Connecticut River. It is dominated by Water-willow and aquatic vegetation and provides habitat for Least Bitterns and other marsh birds, including Virginia Rails and Green Herons. Conservation efforts should seek to protect the entire wetland, as well as a substantial upland buffer that is sufficient to screen the wetland from noise and visual disturbance and to maintain its present hydrologic condition.

Core Habitat BM709

This Core Habitat, located along the Connecticut River in Hadley and Hatfield, provides important river and rivershore habitats for rare plants and animals, including Bald Eagles, Midland Clubtail dragonflies, and the Sandbar Willow.

Plants

Sandy beaches and river sandbars in this Core Habitat support rare rivershore species such as Frank's Lovegrass, a Species of Special Concern, and Sandbar Willow, Threatened in Massachusetts.

Invertebrates

This Core Habitat includes a stretch of the Connecticut River between Hatfield and Hadley that is habitat for the Endangered Midland Clubtail dragonfly, a species that requires large, sand-bottomed rivers and is not known to occur anywhere in Massachusetts but along the Connecticut River. Virtually all the Midland Clubtail's habitat here appears to be unprotected; pollution and hydrologic alterations originating upstream, downstream, or within this Core Habitat are major threats.

Vertebrates

This Core Habitat encompasses nearly four miles of partially forested shoreline along both sides of the Connecticut River in Hatfield and Hadley. These shorelines and the river itself provide perching and foraging habitat for wintering and non-breeding Bald Eagles.

BioMap: Core Habitat Summaries

Hatfield

Core Habitat BM734

The wetlands, meadows, and forests in this Core Habitat support Four-toed Salamanders and Spotted Turtles, as well as the Endangered Bush's Sedge. The central part of this Core Habitat is protected as the Fitzgerald Lake Conservation Area, but the outer areas appear unprotected.

Plants

One of only four known Massachusetts occurrences of Bush's Sedge, an Endangered plant, is found in a wet meadow within this Core Habitat.

Vertebrates

This Core Habitat encompasses a roadless area of mixed forest, forested and scrub-shrub wetlands, and small meadows along four miles of the headwater tributaries of Broad Brook in Northampton. Collectively these habitats support a population of Spotted Turtles. Four-toed Salamanders occur here in small forested pools and seeps with abundant sphagnum moss.

Core Habitat BM751

Natural Communities

This Core Habitat contains a high-quality, species-rich Low-Energy Riverbank community. Low-Energy Riverbanks are open herbaceous communities occurring on sandy or silty mineral soils of river and streambanks that do not experience severe flooding or ice scour. This community type has more grasses than is found on the more northern islands in the Connecticut River.

Living Waters: Species and Habitats

Hatfield

Core Habitat LW354

Exemplary Habitats

Common Name	Scientific Name	Status
Invertebrate Habitat		----------

Plants

Common Name	Scientific Name	Status
American Waterwort	*Elatine americana*	Endangered
Water Star-grass	*Heteranthera dubia*	Watch Listed

Invertebrates

Common Name	Scientific Name	Status
Brook Floater	*Alasmidonta varicosa*	Endangered
Creeper	*Strophitus undulatus*	Special Concern
Eastern Pondmussel	*Ligumia nasuta*	Special Concern
Triangle Floater	*Alasmidonta undulata*	Special Concern
Yellow Lampmussel	*Lampsilis cariosa*	Endangered

Fishes

Common Name	Scientific Name	Status
Burbot	*Lota lota*	Special Concern
Eastern Silvery Minnow	*Hybognathus regius*	Special Concern
Shortnose Sturgeon	*Acipenser brevirostrum*	Endangered

Core Habitat LW425

Exemplary Habitats

Common Name	Scientific Name	Status
Invertebrate Habitat		----------

Living Waters: Species and Habitats

Hatfield

Invertebrates

Common Name	Scientific Name	Status
Creeper	*Strophitus undulatus*	Special Concern
Dwarf Wedgemussel	*Alasmidonta heterodon*	Endangered
Eastern Lampmussel	*Lampsilis radiata*	----------
Eastern Pearlshell	*Margaritifera margaritifera*	----------
Eastern Pondmussel	*Ligumia nasuta*	Special Concern
Triangle Floater	*Alasmidonta undulata*	Special Concern

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Living Waters: Core Habitat Summaries

Hatfield

Core Habitat LW354

This middle section of the Connecticut River flows through a mix of developed, agricultural, and forested lands, and is bounded by the Holyoke dam to the south, and the Tuners Falls dam to the north. The river provides unparalleled freshwater habitats for fishes and invertebrates in Massachusetts.

The river is of conservation significance because it supports the only known occurrence of the Endangered Yellow Lampmussel in Massachusetts. This freshwater mussel lives in large rivers, and was recently rediscovered in the mainstem of the Connecticut River at depths of up to fifteen feet. In the past, the Connecticut River was known to support eleven mussel species, and today there are nine species known from the river.

The Bachelor Brook tributary in Granby and South Hadley also supports a very diverse assemblage of freshwater mussels, including eight of the twelve species found in Massachusetts. Four of these species are state-listed as rare: the Endangered Brook Floater, the Triangle Floater, the Eastern Pondmussel, and the Creeper mussel. These species have generally been found in moderate to slow flowing stretches of the brook below rocky riffles in either mixed sand and gravel runs or in sandy pools. The Brook Floater in particular is believed to be sensitive to low oxygen, pollution, and silt, and is known from only five water bodies in the state. There is some evidence that this small Brook Floater population is reproducing, making this a particularly important site.

Stony Brook in South Hadley supports five freshwater mussel species, including the rare Creeper mussel. This species is found scattered along the lower reach of Stony Brook, near the confluence with the Connecticut River, as it flows slowly over loose sands, gravels, and clays. There are only nineteen Core Habitats for the Creeper, which represent the water bodies that support the most robust populations of this rare mussel across the state.

From Holyoke northward, the Connecticut River mainstem is also home to ten species of state-listed dragonflies, the majority of which are found only in large rivers. The tributaries of the Connecticut River are important habitat for the state-listed dragonflies found in smaller rivers. The Connecticut River and the Connecticut River Valley provide a northward corridor for more southerly species, thus contributing a unique fauna to Massachusetts.

In addition to invertebrate habitats, the Connecticut River supports a diversity of fish habitats. The stretch of the Connecticut River in Montague is an important spawning (breeding) area for the state- and federally-Endangered Shortnose Sturgeon. This long-lived, prehistoric-looking fish is particularly susceptible to habitat degradation and mortality because it does not reach maturity until it is at least 5 - 10 years old. The Shortnose Sturgeon moves many miles during its life cycle, using other parts of the Connecticut River at different times of the year. The stretch of the river from Montague and Deerfield down to Hatfield and Hadley is important feeding and overwintering habitat.

In Hatfield, Hadley, and Northampton, a portion of the Connecticut River and its associated tributaries were delineated as Core Habitat for the Eastern Silvery Minnow, a fish Species of Special Concern. This species is only known from the Connecticut River and lower Deerfield

River in Massachusetts. It spawns in backwaters, laying eggs directly on the river bottom in areas where the emergent vegetation provides cover. Siltation, pollution, and water level changes threaten this species.

The stretch of the Connecticut River in Gill, Greenfield, and Montague downstream from the Turners Falls Dam is presumed habitat for Burbot, a fish Species of Special Concern. Burbot also likely inhabits the Connecticut River in the vicinity of the Fort River confluence in Hadley. This enigmatic fish, a freshwater member of the cod family, has been found at only a few locations in Massachusetts. Not much is known about its life history in the state, although it may live mostly in deep pools of the Connecticut River.

Shallow areas in the Connecticut River north of the Sunderland bridge support a population of the diminutive American Waterwort, an Endangered aquatic plant. This area also supports the uncommon Water Star-Grass, a plant with tiny yellow flowers and long grass-like leaves. Native freshwater plants like these species are an important component of aquatic ecosystems. They provide habitat and nutrition for fish and invertebrates, and they add oxygen to the water through photosynthesis. Permanent protection of the riparian land adjacent to this Core Habitat, and careful management of runoff from developed and agricultural areas will help ensure the continued quality of this key Core Habitat in Massachusetts.

Core Habitat LW425

The Mill River in Whately and Hatfield is considered to be the top conservation priority for freshwater mussels in Massachusetts. The river supports the most diverse assemblage of mussels known in the state, including a viable population of the state- and federally-Endangered Dwarf Wedgemussel. Also among the nine mussel species found here, are the rare Triangle Floater, the Eastern Pondmussel, and the Creeper mussel. The river habitat is unique because below the falls near route 116 in Deerfield, the gradient of the Mill River flattens and the river slowly flows across the old lakebed of former Glacial Lake Hitchcock. Here the riverbed is made up of softer sands, silts, and clays, which allow mussels to successfully get a foothold in the bottom sediments. Robust populations of many of these mussel species, along with clear evidence of reproduction, further attest to the importance of this site for freshwater mussel biodiversity.

Tributaries to the Mill River, Running Gutter and Broad Brooks also support diverse communities of freshwater mussels, including the state- and federally-Endangered Dwarf Wedgemussel, and the uncommon Eastern Pearlshell mussel. Both of these species are found in the low gradient stretches of Running Gutter Brook in patches of sand and silt. The beaver dams in this brook likely benefit mussels. Beaver dams slow water flow and trap sediments, which allow mussels to get a foothold in an otherwise quick flowing environment.

This Core Habitat also supports rare dragonflies. These aquatic insects are good indicators of ecosystem health, confirming that this Core Habitat contains high-quality freshwater habitats for aquatic species.

Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage &
Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: www.nhesp.org.